June 5, 1862.

The Annual Meeting for the Election of Fellows was held this day.

Major-General SABINE, President, in the Chair.

The Statutes relating to the Election of Fellows having been read, Mr. Curling and Mr. Scott Russell were, with the consent of the Society, nominated Scrutators to assist the Secretaries in examining the Lists.

The votes of the Fellows present having been collected, the following gentlemen were declared duly elected into the Society:—

George Bentham, Esq.
Henry William Bristow, Esq.
Alexander Ross Clarke, Captain R.E.
John W. Dawson, Esq.
Frederick J. Owen Evans, Esq., R.N.
John Braxton Hicks, M.D.
The Very Rev. W. Farquhar Hook, D.D.
George Rolleston, M.D.
Charles William Siemens, Esq.
Maxwell Simpson, Esq.
Balfour Stewart, Esq.
Thomas Pridgin Teale, Esq.
Sir James Emerson Tennent, LL.D.
Isaac Todhunter, Esq., M.A.
C. Greville Williams, Esq.

The Society then adjourned to Thursday, June 19.

June 19, 1862.

Major-General SABINE, President, in the Chair.

Frederick John Owen Evans, Esq., Sir James Emerson Tennent, Thomas Pridgin Teale, Esq., The Very Rev. Walter Farquhar Hook, D.D., Maxwell Simpson, Esq., Dr. J. Braxton Hicks, C. W. Siemens, Esq., Isaac Todhunter, Esq., and C. Greville Williams, Esq., were admitted into the Society.

César Mansuete Despretz, Franz Ernst Neumann, and Ernst Heinrich Weber, were balloted for, pursuant to notice, and elected Foreign Members of the Society.

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The following communications were read :—

I. "Dissections of the Ganglia and Nerves of the Œsophagus, Stomach, and Lungs." By ROBERT LEE, M.D., F.R.S. Received May 13, 1862.

On the 17th of July 1861 I resolved to dissect the nerves of the human stomach immersed in alcohol, as I had done those of the uterus and heart, with magnifying powers of six and twelve diameters. Having procured from Dr. William Dickinson at St. George's Hospital a healthy stomach with three inches of the œsophagus, and having thoroughly washed away the contents, and the blood from the vessels, it was placed in a shallow vessel and covered with rectified spirit. With the help of my dissecting lens, a pair of small straight forceps, a pair of small curved forceps, and curved needle, I proceeded cautiously to remove all the white condensed cellular membrane in which the trunks and branches of the par vagum on the œsophagus were imbedded, and the sheath of slender fibres of cellular membrane closely investing all the nerves. Two glands situated near the termination of the œsophagus in the stomach were likewise removed.

The trunks and branches of the par vagum having thus been completely laid bare, the whole œsophagus appeared covered with ganglionic plexuses of nerves, and distinct ganglia formed on the nerves were clearly seen. Some of these ganglia had the usual appearance of ganglia of the great sympathetic, with nerves entering and nerves passing out from them, and these branches passing into other ganglia. Some of the ganglia formed on the trunks of the par vagum were long and thin, presenting the appearance which Mr. Joseph Swan has called gangliform membranes. Near the cardia, both trunks of the par vagum terminated abruptly in long solid ganglia of a reddish colour and firm texture ; and from these numerous small branches of nerves with ganglia were sent to the whole cardiac extremity of the stomach without being accompanied with arteries; and others were sent to the coronary artery, and accompanied this artery with all its ramifications to the lining membrane of the stomach.

On examining minutely the ganglia and nerves of the œsophagus, numerous branches were seen passing down between the strong longitudinal muscular fibres of the œsophagus to the circular muscular fibres of the middle coat, upon which plexuses of nerves with small ganglia were formed. Some branches of nerves were seen passing from the middle coat of the œsophagus into the lining membrane.

After having completed the dissection of the œsophageal ganglia and nerves, the nerves continuous with them were then carefully traced throughout the walls of the stomach from the cardia to the pylorus. The peritoneal coat having been removed, a thin strong tendinous expansion was seen underneath, covering the whole convex border of the stomach and a great part of both the anterior and posterior surfaces; the removal of this fascia was necessary before the nerves could be traced.

If the preparation be now examined, numerous small nerves will be seen proceeding from the abrupt termination of the par vagum at the cardia, and distributed extensively over the cardiac extremity of the stomach, to the muscular coat. Numerous branches of nerves can be seen passing down between the muscular fibres of the outer to the subjacent muscular coat, and largely distributed over the fibres of this coat.

The two trunks of the par vagum, divided into numerous branches, can be seen passing forward to the coronary artery, which has been cut across, with all the nerves proceeding from the semilunar ganglion which united at the cardiac extremity of the stomach with these nerves continued from the par vagum.

The trunk and all the branches of the coronary artery are accompanied with nerves from the par vagum and semilunar ganglion, and in this dissection the nerves with the arteries have been traced extensively to the lining membrane of the stomach. The branches of the coronary artery are seen passing down through the muscular coats generally, about midway between the smaller and larger curvatures, accompanied with nerves upon which ganglia are formed; and numerous branches of nerves are seen passing to the muscular coats from the nerves which accompany the arteries.

I will not attempt further on this occasion to describe the ganglia and nerves of the œsophagus and stomach displayed in this dissection, from which it is obvious that there are two sets of nerves distributed throughout the walls of the stomach, one to the muscular coats, the other destined to supply the lining membrane.

I have made elaborate dissections of the ganglia and nerves of the whole œsophagus, stomach, alimentary canal, and lungs; but of these

I shall give no account to the Royal Society unless expressly requested by the Council to do so, and assured that my communication shall receive that treatment which I consider the importance of the subject to demand.

II. "Further Observations on the Distribution of Nerves to the Elementary Fibres of Striped Muscle." By LIONEL S. BEALE, M.B., F.R.S., Professor of Physiology and of General and Morbid Anatomy in King's College, London; Physician to King's College Hospital. Received June 19, 1862.

(Abstract.)

After referring to the views entertained on the mode of termination of the nerves in the tissues generally, the author proceeds to consider the arrangement of the nerves in muscle. The old view was that nerves terminate in loops or networks which are external to the sarcolemma. More recent researches had proved that these loops and networks are composed of coarse dark-bordered fibres, and from them finer fibres had been followed to the surface of the elementary fibres, and it was concluded that these terminate upon the sarcolemma in *free ends*. In the Philosophical Transactions for 1860, a paper by the author was published, in which it was shown that the distribution of nerve-fibres to the muscles of the mouse was much more extensive than was generally supposed, and that to each muscular fibre, pale nerve-fibres with nuclei are distributed throughout its entire length; that numerous fibres cross the elementary fibres at various angles, and thus the appearance of a network of nerve-fibres is produced. This network is upon the same plane as the capillaries, and can be stripped off the surface of the sarcolemma with these vessels. Last year Kühne published a memoir on the termination of the nerves upon the elementary muscular fibres of the frog, and supported his view expressed in previous papers, that the nerves penetrate the sarcolemma and terminate in close relation to the contractile tissue*. Kühne endeavoured to show that the white substance of the nerve ceases at the sarcolemma, and that a pale nucleated fibre, the continuation of

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* Ueber die peripherischen Endorgane der motorischen Nerven, 1862.